RESPONSE TO PAPER BY DR. EDWARD J. HUTH, M.D.: THE INFORMATION EXPLOSION*

NICHOLAS E. DAVIES, M.D.
Editorial Board, *Annals of Internal Medicine*
Clinical Professor of Medicine
Emory School of Medicine
Atlanta, Georgia

I WAS VERY PLEASED to be invited to respond to Dr. Huth's paper. I have been interested in the information explosion for more than a decade, since I became interested in medical libraries and medical information. And my interest has been primarily in how this information explosion affects practicing physicians. So it is to this topic that I shall address most of my remarks.

Dr. Huth described the differences in the information needs between the researcher and the practitioner. They are certainly far from the same. One system that would satisfy the researcher would not satisfy the practitioner and vice versa. This needs to be thought of as we further develop our electronic information systems.

I am pleased that he touched on some of the causes of the information explosion. There are certainly many. One of the most important, as far as I am concerned and as far as practice is concerned, is that of the enormous growth of technology that has come about since World War II, and especially during the last 15 years. As far as the practice community is concerned, another is the proliferation of throw-away journals and monographs that create enormous piles of questionable literature sitting beside our office desks or on our chairs at home. Dr. Huth is correct, those of us who are compulsive internists just hate to throw anything away before looking at it. So finally my wife makes the decision for me, and out it goes; it has been there too long.

A side issue that I do not have time to discuss and one related to the "publish or perish" mentality again, which I don't have time to discuss today, is the number of academics contributing to the throw-away literature. If I were chairman of the department of medicine, I would set some very strict rules for that. Oddly, it is often the chairmen who edit the throw-away publications.

*Presented in a panel, The Information Explosion, as part of a *Symposium on The Future of Information Systems for the Medical Sciences* held by the Committee on Medical Education of the New York Academy of Medicine April 25, 1988.

The information explosion is changing the way medicine is practiced. Dr. Huth has noted there is just too much out there to be known, so that the subspecialists are developing their own subspecialties. Just last Thursday I reviewed the infectious disease examination that will be given this fall by the American Board of Internal Medicine, and I was shocked to learn that I had not heard of at least one half of the organisms that were being asked about.

One of the diseases on the board examination was Katayama fever. I had never heard of Katayama fever. It has something to do with schistosomiasis. It is amazing what is being done that is new.

No wonder it is that a practitioner, when facing these very complex situations, must seek other ways to get information, and most of these are through consultations. So, if you have been in the hospital recently and have been quite sick, you probably had two or three or four or five or six physicians, each of whom knew a great deal about his subspecialty.

As pointed out by Dr. Huth, time is indeed money in the practice of medicine, as it is in law and other professions and trades. Dr. Huth is correct in saying that, except in matters of life and death—and there are fortunately not many of these situations except in medical television shows—physicians will not spend much time in searching for nonessential information. Our current system is not yet user-friendly for busy practitioners. I am convinced that in time it will be.

I was saddened but not surprised to learn from the Harris Survey that 5% of practicing physicians do not have access to any library whatsoever; that 26% do not have access to medical databases; and that of those who do have database searching capabilities, some 37% have not used them during the past year. These are the people who are treating the sick in this country. They should be the physicians who need information the most, and who get it the most, but clearly they are not.

I agree with the statements in the Harris Survey that "key people who are responsible in helping doctors, students, and faculty make the most of the information available to them, are either not aware of the user needs, not able to meet these needs, or both." And, that "many users are incompetent in knowing or asking for what they need."

I must comment on the observation that "Office-based physicians are indeed sorely out of touch with the advantages of database technology.... Their use of this technology is certainly glaringly limited." Yes, we are still in the horse-and-buggy days as far as information requirements are concerned. Yet, having conceded that, what is to be done? Where do we go from here?

First, except for the few minor exceptions, I would simply write off those practitioners who are over 45. They are a technologically lost generation; forget them. Then, what is to be done with younger physicians, those under

45, in practice? I do not have the answer.

What about the medical students and residents, the young people who are being molded for the practice of medicine for the next 30 years? I don't think you can hang on that long in the future.

I survey internal medicine residency training programs for the American Board of Internal Medicine, and I have yet to find a program that requires its trainees to learn how to do database searching. There must be some out there, but I have not found one yet, nor have I reviewed one. So I ask you, if medical schools and residency training programs do not teach our young physicians to use the latest information technology, where do we begin? How can we train these physicians to do lumbar punctures and thoracenteses and bone-marrow biopsies when we do not teach them modern techniques of finding information, techniques that they will need for the rest of their lives? They may do 10, 20, or even 30 lumbar punctures during the rest of their medical careers. They should either do, or at least request, thousands of database searches over the next 30 or 35 years. Information searches must become a part of their diagnostic and therapeutic armamentarium.

So I am laying a lot of guilt, I hope, on the academics, the medical schools, and training programs. There are two other groups on whom I should lay a little guilt besides the medical training programs. The first is the medical library community. My message to you librarians is: stop being so darn nice and accommodating and become aggressive; push your product. It's a great one, it needs to be sold. Get higher degrees so that you are not on the bottom of the academic totem pole. Let the deans and the hospital administrators and those controlling the purse strings know that we are now in an information age, that information is what you know and do best. To be a first class institution, your programs must be funded adequately. This should be easy because it is true.

The last group that I would like to stimulate a bit is that made up of the various medical societies, societies like the American College of Physicians, American College of Surgeons, Pediatrics, and others. Dr. Huth and I, and others here today, have been closely connected with the American College of Physicians. These are the groups that have set standards for the practitioners of the nation. The American College of Physicians has tried hard to take the lead in this field. Unfortunately, we still do not have the critical mass of internists trained in the computer sciences necessary to make an active program work. There needs to be better training in medical schools; there must be better hardware and software; there must be easier access to databases that are not only user-friendly, but are user-contagious, user-fun. Perhaps when this comes about, the information explosion tiger will become a pussycat. I certainly hope so.